

# PROJECT STATEMENT

STATE: DELAWARE

GRANT: W38R-12

GRANT TITLE: WILDLIFE INVESTIGATIONS – WILD TURKEY

JOB SCHEDULE: OCTOBER 1, 2010 – SEPTEMBER 30, 2011



Photo: Bob Eriksen

**STATE: Delaware****GRANT NUMBER AND TITLE:**

W 38R – Wildlife Investigations: Wild Turkey

**OBJECTIVE:**

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

**JOB NUMBER AND TITLE:**

Job 1. Wild Turkey Harvest Evaluation

**JOB OBJECTIVE:**

To monitor the annual wild turkey harvest and associated hunter effort and collect biological data from harvested birds.

**ACTIVITY:**

In 2011, Delaware's spring turkey hunting season was extended from 18 days to 25 days, running from 9 April to 7 May 2011. This season is the longest turkey season Delaware has ever had. Private land hunters were allowed to hunt all 25 days of the season; public land hunters were selected through a preseason lottery to hunt one of four, week-long season segments (A, B, C, & D) during the same 25-day period (no Sunday hunting). In 2011, a youth hunt was permitted on private lands and occurred on April 2. Mandatory check stations were set up to collect biological information from all harvested birds. Only bearded birds may be legally harvested.

**TARGET DATE:**

September 30, 2011

**STATUS:**

On schedule

**REMARKS:**

In 2011, a new state record of 486 birds were taken, up 33% from the 2010 harvest of 366 birds, the previous state harvest record (Figure 1). Ninety percent of the total harvest (n=435) occurred on private property. Fifty-one turkeys were taken on public lands, up 19% from the 2010 harvest of 43 birds and a new public lands harvest record. Public lands with the highest harvest were Redden State Forest (n=14) and Midlands Wildlife Area (n=11; Table 1). During Delaware's second annual youth turkey hunt, 16 birds were harvested compared to 9 birds during the previous year. For the purposes of harvest

reporting, Delaware is divided into 4 management regions, comprised of 17 turkey harvest management zones (Figure 2). Reported harvest was again highest in zone 6, which accounted for 17% of the total harvest (Figure 3), an increase over the 13% reported in 2010. Birds were harvested in all management regions, except the Northern region, comprised of zones 1A and 1B (formerly combined into Zone 1) and characterized by mostly suburban, urban and industrial development, including the cities of Wilmington and Newark. The Interior region accounted for 48% of the total harvest, followed by the Southern region (45%), and the Bayshore region (7%). Forty percent of the reported harvest (n=184) occurred during first week of the season (Figure 4). Weekly harvest declined during weeks two (n=108; 24%) and three (n=68; 15%) but increased during the fourth week (n=97, 21%), mostly due to the additional hunting day that resulted from extending the season to include another Saturday (Figure 4). Adult gobblers comprised 53% (n=259) of the male harvest, a lower percentage than the 66% adult gobbler harvest recorded in 2009 and 2010. Four bearded hens were also harvested this year. The average live-weight of adult gobblers was 20.3 lbs, with the largest bird weighing 25.5 lbs.

### **RECOMMENDATIONS:**

This job should be continued, especially since the harvest of turkeys in Delaware continues to increase significantly, with record harvests occurring in each of the last seven seasons.

### **PREPARED BY:**

Matthew DiBona  
Gamebird biologist

### **REVIEWED BY:**

Rob Hossler  
Program Manager – Game Species

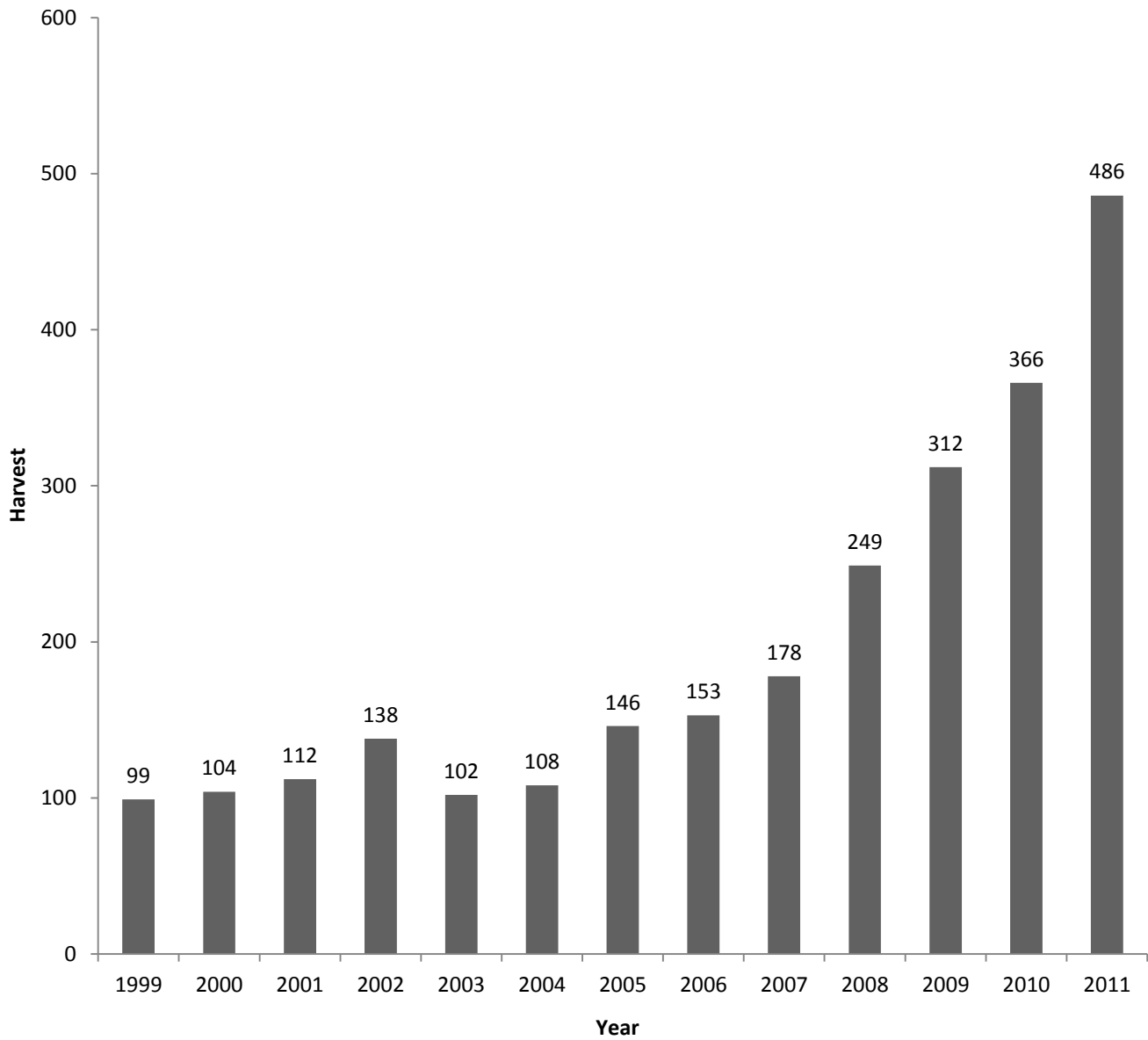


Figure 1. Annual harvest of wild turkeys in Delaware.

Table 1. Harvest distribution among public lands hunted during the 2011 Delaware spring turkey season.

Area	Harvest
Assawoman WA	1
Blackbird Reserve	0
Blackbird SF	0
Blackiston WA	4
C & D Canal WA	0
Cedar Swamp WA	1
Industrial Forest WA	0
Little Creek WA	4
Marshy Hope WA	1
Midlands WA	11
Milford Neck WA	3
Nanticoke WA	2
Norman G. Wilder WA	8
Old Furnace WA	0
Prime Hook WA	0
Redden SF	14
Taber SF	0
Ted Harvey CA/Logan Lane Tract	2
Ted Harvey CA/Buckaloo Tract	0
Urban/Fortney Tracts	0
Woodland Beach WA	0
Total	51

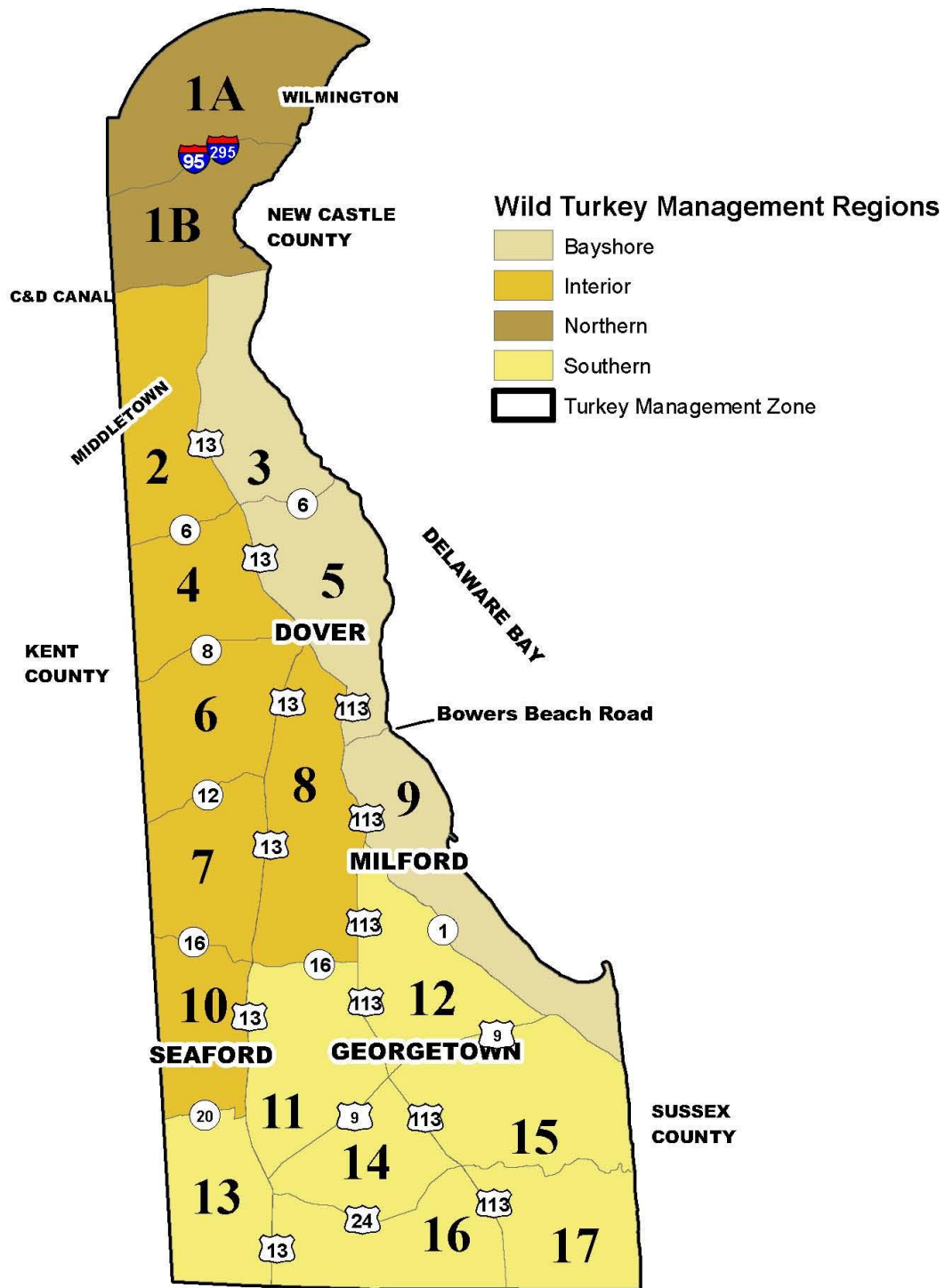


Figure 2. Wild turkey management regions in Delaware

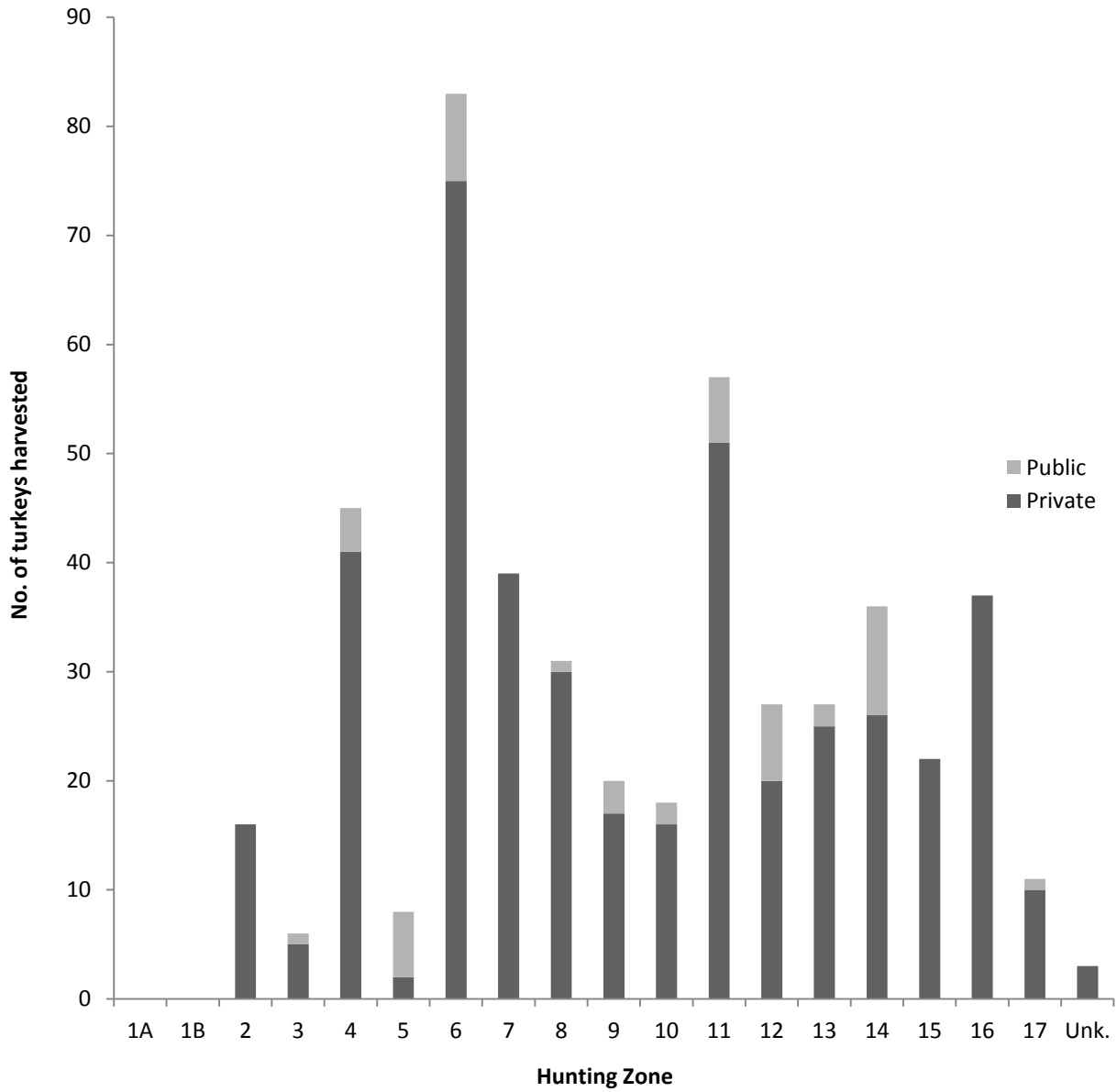


Figure 3. Spring 2011 Delaware turkey harvest on public and private lands by hunting zone.

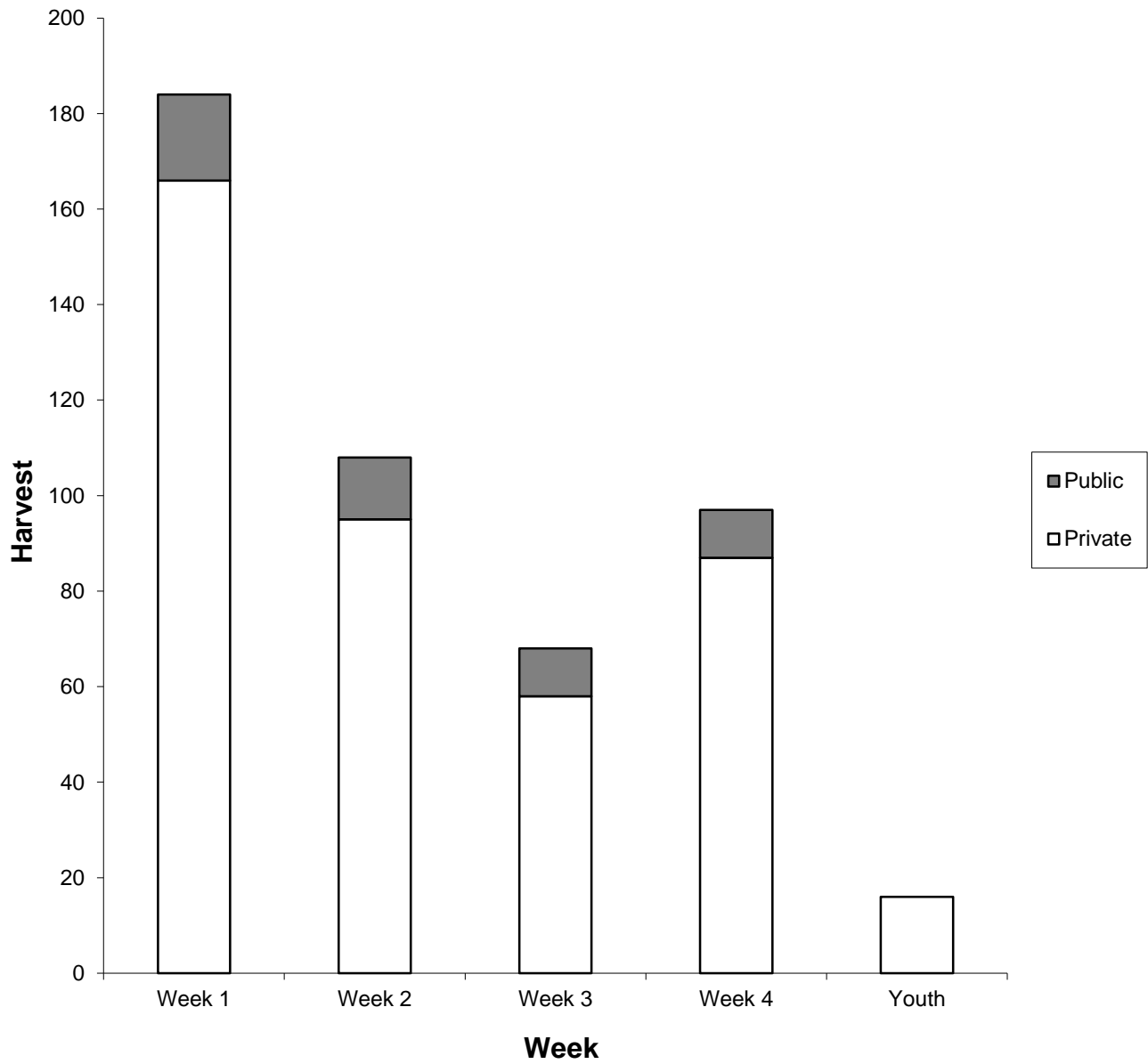


Figure 4. Spring 2011 turkey harvest by week on public and private lands.

**STATE:** Delaware

**GRANT NUMBER AND TITLE:**

W 38R – Wildlife Investigations: Wild Turkey

**OBJECTIVE:**

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

**JOB NUMBER AND TITLE:**

Job 2. Factors affecting wild turkey production and survival.

**JOB OBJECTIVE:**

To evaluate the reproductive ecology, habitat use, and survival of wild turkeys in Delaware.

**ACTIVITY:**

Turkey movements and nests were monitored to determine reproductive ecology of wild turkeys on the Delmarva Peninsula, specifically Sussex County, Delaware. Our specific objectives were to determine nesting success and clutch size for wild turkeys and determine adult hen and poult survival for wild turkeys.

We initiated capture activities in December 2009. During the winter of 2010, we captured 62 birds and attached radio transmitters to 36 hens; in 2011, 42 birds were captured and 29 hens were outfitted with transmitters. We started monitoring movements 14 days after capture. From 22 December 2009 to 30 September 2011, we collected 5,925 locations on hens with radio transmitters. We have documented 31 mortalities (23 fox, 4 owl, and 2 illegal harvest, 1 unknown, 1 vehicle). As of 30 September 2011, 27 hens were still alive and transmitting.

We documented 63 nesting attempts by 53 individual adults and 5 nesting attempts by 5 individual juveniles across both years. Of these 68 attempts, 43 (63%) were on private land and 25 (37%) were on public land. The nest initiation dates ranged from 23 April to 28 June with most (80%) occurring the first week of May. We documented 16 successful nests, indicating a hen nesting success of 28% (12 on private land and 4 on public land). The hatching dates ranged from 30 May to 18 June with most (89%) hatching occurring during the first week of June. We located eggs for 22 of the 66 nests and documented 182 eggs in these nests. Unknown predators destroyed 57 (31%) of these eggs and 125 eggs hatched. The average clutch size was 8.3 eggs (range = 4-14). We observed a 43% poult survival.

**TARGET DATE:**

September 30, 2011

**STATUS:**

On schedule. Additionally, because 27 hens are still actively transmitting, the Division is considering monitoring these birds in 2012 to obtain another year of data on hen survival and nesting success.

**REMARKS:**

Hen survival differed significantly between 2010 and 2011, possibly due to the severe winter observed in 2010. Additionally we encountered issues estimating poult survival. The actual poult counts are skewed by multiple hens rearing broods together so we are using the index of individual poult per hen. We will proceed with analyzing results of the study and determine spatial analyses with ArcGIS.

**RECOMMENDATIONS:**

This job should be continued

**PREPARED BY:**

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**GRANT NUMBER AND TITLE:**

W 38R – Wildlife Investigations: Wild Turkey

**OBJECTIVE:**

To restore and maintain wild turkey populations in all suitable habitat while maximizing recreational use of this resource.

**JOB NUMBER AND TITLE:**

Job 3. Wild Turkey Genetics

**JOB OBJECTIVE:**

To evaluate the genetic diversity of the wild turkey population in Delaware.

**ACTIVITY:**

The graduate student attached to this project has removed herself from school. The graduate advisor and other staff from Delaware State University will finish the data analysis and provide project results during the next grant segment.

**TARGET DATE:**

September 30, 2010

**STATUS:**

On schedule- per approved extension.

**REMARKS:**

The graduate student was able to collect 46 genetic samples from Division-operated check stations in 2008 and 77 samples in 2009. She has also received genetic samples from cooperating state agencies in the northeast to conduct comparative genetic analyses between Delaware turkeys and birds from source stock states that originally donated turkeys to Delaware during restoration activities in the 1980s and 1990s. Tentative analyses will include spatial and temporal comparisons of genetic structure and diversity of the Delaware turkey population, including comparisons among samples collected in each county and by year. Samples will also be tested for hybridization with domestic turkey stock. Source stock comparisons will examine genetic structure and diversity between source states and the Delaware turkey population.

**RECOMMENDATIONS:**

This job should be continued

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